Quarterly of the Horizon of Medical Sciences
Volume 21, Special Issue, 2015
Pages: 103-108
Type: Original Research

Antibacterial Activity of *Nigella sativa* Ethanolic Extract Against Isolated Bacteria from Intensive Care Unit Patients

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Abstract

Aims: The nosocomial infection in the intensive care units (ICU) results in an increase in the death level, as well as hospitalization length. The aim of this study was to investigate the antibacterial effects of alcoholic extract of Nigella sativa on the bacteria removed from the patients hospitalized in the hospital.

Materials & Methods: In the experimental study, 100 clinical samples collected from the hospitalized patients in ICUs in Tehran hospitals during 2015 were studied. The samples presented to the laboratory included 28 samples of respiratory system secretions (28%), 25 blood samples (25%), 20 wound samples (20%), 18 urine samples (18%), and 9 cerebrospinal fluid samples (9%). Each sample, having been cultured on 2 blood agar environment, was incubated at both aerobic and anaerobic conditions. The micro-broth dilution method was used to determine the lowest concentration of Nigella sativa extract with inhibitory effect.

Findings: The most and the least micro-organism numbers removed from the patients were Staphylococcus aureus (35 samples) and Escherichia coli (17 samples), respectively. In different concentrations of the extract, the growth of all the micro-organisms was inhibited. Excluding type of the removed bacteria, the growth rates of 24 isolates at 200mg/ml, 46 isolates at 100mg/ml, 29 isolates at 50mg/ml, and 1 isolate at 25mg/ml were inhibited.

Conclusion: As effective antibacterial factors, different concentrations of Nigella sativa extract can be used to prevent the nosocomial infection due to different bacteria.

Keywords
Nigella Sativa; Intensive Care Units (ICU); Nosocomial Infection

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Received: February 12, 2016 Accepted: April 19, 2016 ePublished: January 1, 2016